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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,161	03/29/2004	Klaus Gerstner	2903	2995

7590 06/29/2006

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EXAMINER
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AKANBI, ISIAKA O

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/812,161

Applicant(s)

GERSTNER ET AL.

Examiner

Isiaka O. Akanbi

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 15 July 2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement file 29 March 2004 and 15 July 2004 has been entered and reference considered by the examiner.

### ***Drawings***

The examiner approves the drawings filed 29 March 2004.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 13 and 18-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al. (6,437,357 B1) in view of Henley et al. (5,790,247)

Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss in view of Henley. The reference of Weiss teaches of the features of claim 1, comprising irradiating (8/20) a definite partial volume of the transparent material (3B) with a first radiation source (8D/8B/20/21)(figs. 1 and 2), detecting (15/16/15A/16A)(30/31/30A/31A)(figs. 1 and 2) scattered light from said fault in said partial volume, bright field absorption from said fault in said partial volume and/or deflection of light of said first radiation source by said fault in said partial volume in order to detect the presence of said fault in said partial volume of the transparent material (col. 3, line 51-col. 6, line 1-14)(col. 11, line 31 claim 18), however the reference of Weiss is silent regarding the coupling light of a second radiation source into the transparent material so that an optical path of said light in said partial volume extends exclusively in an interior of the transparent material. Combining two system/two aspect of a system is known in the art and the general way of doing so is known as evident by Henley et al. (5,790,247). The reference of Henley teaches of combining two aspect of a system (fig. 1). It would have been

obvious to one having ordinary skill in the art at the time of invention to provide coupling light of a second radiation source into the transparent material so that an optical path of said light in said partial volume extends exclusively in an interior of the transparent material for the purpose of providing a more accurate measurement/information, further It would have been obvious to one having ordinary skill in the art at the time of invention to provide coupling light of a second radiation source into the transparent material so that an optical path of said light in said partial volume extends exclusively in an interior of the transparent material for the purpose of saving time.

As to claim 2, Weiss and Henley disclose everything claimed, as applied to claim 1 above, in addition Weiss discloses measuring the material with local spatial resolution (figs. 1 and 2).

As to claim 3, Weiss and Henley disclose everything claimed, as applied to claim 1 above, in addition Weiss discloses determining a fault type of said fault from a ratio of a bright field signal to a scattered light signal or from a ratio of a deflection signal to said scattered light signal (col. 2, line 29-46)(col. 11, line 31-34).

As to claim 4, Weiss and Henley disclose everything claimed, as applied to claim 1 above, in addition Weiss discloses wherein said second radiation source emits monochromatic light (i.e. laser)(col. 1, line 57-58).

As to claim 5, Weiss and Henley disclose everything claimed, as applied to claim 1 above, the reference of Weiss teaches of the features of claim 1, comprising a second radiation source (i.e. laser)(col. 1, line 57-58) and a sheet of glass (3B), however the reference of Weiss is silent regarding wherein said light from said second radiation source is coupled into a flat glass sheet or a flat glass plate. Combining/coupling two source/system/two aspect of a system/light is known in the art and the general way of doing so is known as evident by Henley et al. (5,790,247) or Champetier (4,808,813). The reference of Henley teaches of combining two aspect of a system (fig. 1). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a second radiation source that is coupled into a flat glass sheet or a flat glass plate for the purpose of providing a more accurate measurement/information.

As to claims 6, 8 and 20-21, Weiss and Henley disclose everything claimed, as applied to claim 1 and 15 above, the reference of Weiss teaches of the features of claim 1, comprising a second radiation source (i.e. laser)(col. 1, line 57-58), however the reference of Weiss is silent regarding the color of the second source as being (i.e. green or red). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a second radiation source that emits green light for the purpose of providing a more accurate measurement/information of the various types of defects.

As to claims 7 and 22, Weiss and Henley disclose everything claimed, as applied to claim 6 and 15 above, the reference of Weiss teaches of the features of claim 6, comprising a light source (i.e. laser)(col. 1, line 57-58), however the reference of Weiss is silent regarding the color of the light source as being (i.e. green or red) and the specific wavelength of the light source as being (i.e. 532 nm). The reference of Henley teaches of a light source with wavelength (i.e. 450-900 nm)(col. 4, line 57-59). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a light source that emits green light with a wavelength in the range (i.e. 450-900 nm) for the purpose of providing a more accurate measurement/information of the various types of defects.

As to claims 9,10 and 11, Weiss and Henley disclose everything claimed, as applied to claim 1 above, the reference of Weiss teaches of the features of claims 1 and 5, comprising a second radiation source (i.e. laser)(col. 1, line 57-58) and a sheet of glass (3B), however the reference of Weiss is silent regarding wherein said light of the second radiation source coupled into the transparent material so that said light experiences total reflection in the interior of the transparent material and has an intensity that is about ten times higher at an edge of the transparent material than in a center of the transparent material. The reference of Henley teaches of a light source that experiences total reflection in the interior of the transparent material (102) with wavelength (i.e. 450-900 nm)(fig. 1)(col. 4, line 57-59)(col. 5, line 37-46). It would have been obvious to one having ordinary skill in the art at the time of invention to provide second radiation source that experiences total reflection in the interior of the transparent material with a wavelength in the range (i.e. 450-900 nm) coupled into the transparent material that has an intensity that is about ten times higher at an edge of the transparent material than in a center of the transparent material for the purpose of providing a more accurate measurement/information of the various types of defects.

As to claim 16, Weiss and Henley disclose everything claimed, as applied to claim 15 above, in addition Weiss discloses wherein said first radiation source (8/20/21) comprising two parts and said two pads emit light of different intensities or wavelengths (col. 2, line 15-16)(col. 2, line 1-4).

As to claim 19, Weiss and Henley disclose everything claimed, as applied to claim 16 above, in addition Weiss discloses wherein said detector is arranged for detection of bright field light in such a way that said detector detects radiation from both of said two parts of the first radiation source (col. 2, line 22-26).

As to claim 24, Weiss and Henley disclose everything claimed, as applied to claim 15 above, in addition Weiss discloses an electronic device (36) for controlling said first radiation source and said second radiation source so that the first radiation source and the second radiation source emit only time-shifted light (col. 5, line 32-43).

As to claim 25, Weiss and Henley disclose everything claimed, as applied to claim 15 above, in addition Weiss discloses wherein said detector detects a bright field signal, a scattered light signal and/or a deflection signal (col. 2, line 29-32).

As to claim 26, Weiss and Henley disclose everything claimed, as applied to claim 15 above, in addition Weiss discloses wherein said detector is a CCD Camera (col. 7, line 1-2)

As to claims 13, 18 and 23, Weiss and Henley disclose everything claimed, as applied to claim 1, 15 and 21 above, the reference of Weiss teaches of the features of claim 6, comprising radiation source (i.e. laser)(col. 1, line 57-58), however the reference of Weiss is silent regarding wherein both of said radiation sources emit pulsed light and one of the radiation sources emits pulses of said pulsed light only in pause intervals between pulses from another of the radiation sources. The reference of Henley teaches of a radiation source that is pulsed (col. 9, 39-44). It would have been obvious to one having ordinary skill in the art at the time of invention to provide radiation sources that emit pulsed light and one of the radiation sources that emits pulses of said pulsed light only in pause intervals between pulses from another of the radiation sources for the purpose of simplifying the system and economic benefit.

Claims 12, 14 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al. (6,437,357 B1) in view of Henley et al. (5,790,247) in view of the Applicant's Admitted Prior Art (A.P.A).

As to claim 12, as the combination of Weiss and Henley discloses the claimed invention except for is silent regarding wherein said light of the second radiation source is coupled into the transparent material through a transparent liquid, however the applicant discloses (page 3, par. 2) that this is a well known. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Weiss and Henley in conjunction with applicant indication of the method to provide said light of the second radiation source that is coupled into the transparent material through a transparent liquid (i.e. water) to meet the terms of the claims for the purpose of providing a more accurate measurement/information. (see In Ex parte McGaughey, 6 USPQ2d 1334, 1337 (Bd. Pat. App. & Int.1988).

As to claims 14, 16 and 17, as the combination of Weiss and Henley discloses the claimed invention except for is silent regarding wherein said first radiation source is divided into two parts and said two parts emit different colored light, however the applicant discloses (page 2, par. 2) that this is a well known. Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Weiss and Henley in conjunction with applicant indication of the method to provide said first radiation source that is divided into two parts and said two parts that emit different colored light to meet the terms of the claims for the purpose of providing a more accurate measurement/information. (see In Ex parte McGaughey, 6 USPQ2d 1334, 1337 (Bd. Pat. App. & Int.1988).

#### **Additional Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art method/apparatus for detecting faults in transparent material that may anticipate or obviate the claims of the applicant's invention.

#### **Conclusion**

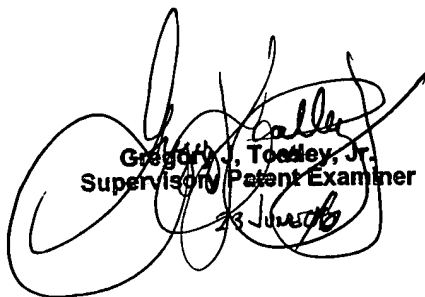
#### **Fax/Telephone Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi  
June 13, 2006



Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
23 June 06